

HISTORY OF (UN)NATURAL DISASTERS

HSCI 3246/5246

3 Units

University of Minnesota

Spring 2018

TTH 11:15-12:30 Ford Hall 110

Instructor: Robert Gardner

Office: Shepherd Labs 131

Phone: 612-626-7581

Email: gardnerr@umn.edu

Teaching Assistant: Samuel Froiland

Office: Shepherd Labs 152

Email: froil017@umn.edu

Office Hours: TTH 4:00 to 5:00 and by appointment. I am usually in my office throughout the day and you are welcome to stop in and see me anytime I am there.

Course Description

Earthquakes, hurricanes, tsunamis, wildfires, epidemic disease, and technological failures—This course will examine large scale natural events in American and world history, the social, technological, and environmental conditions that underlie them, and their historical consequences. Human societies have long been embedded in physical landscapes where they are subject to specific environmental conditions and physical risks: eight thousand-year-old wall paintings in Turkey depict the eruption of Hasan Dag volcano over the city of Catal Huyuk, for example. But then and now, it takes a certain combination of social conditions and environmental events to create a natural disaster. In this course, we will use historical natural disasters to explore the interconnections between the structures and ideas of human society and environmental forces. Humans have not been simply the random victims of natural disasters; where and how they chose to live influenced the impact of any disastrous event. Examining these events in a historical context will help us see the social, technological, scientific, and environmental systems that have been constantly interacting, but which are normally taken for granted until they break down.

Course Goals

- To develop critical thinking skills, particularly by trying to untangle the combinations of social and environmental forces and the interconnecting systems that have historically made up a natural disaster.
- To explore how natural disasters have shaped the history of human societies.
- To study how people have understood and explained past natural disasters.
- To develop good writing and speaking skills by analyzing the above issues and presenting our conclusions in formal essays and classroom discussions.
- To use historical knowledge and methods to better understand current issues.

Liberal Education Requirements

This course fulfills the **Historical Perspectives Core** by:

- Studying the historical relationships between human settlements and societies and their surrounding environments, particularly paying attention to how perceptions of that relationship contribute to and are subsequently shaped by natural disasters
- Examining the human past in regard to historical changes in physical structures and social institutions, especially as they intersect with and are influenced by natural disasters during the 19th, 20th, and 21st centuries
- Having students use historical methods and critical thinking to examine historical events and analyze scholarly arguments. These skills will be assessed through graded reaction papers and History Labs.
- Having students work with historical primary sources, particularly in interpreting historical documents as part of discussion assignments and History Labs.
- Having students evaluate the uses and limitations of primary sources through class discussions and individual work in reaction papers and discussion assignments.
- Considering how historical questions and sources inform our understanding of the past and its significance in creating the present, particularly through writing reading reaction papers and essay exam questions which require students to make connections between historical events and contemporary conditions.

This course fulfills the **Environment Theme** by:

- Examining major environmental issues such as urbanization, pollution, climate change, environmental justice and the influence of technologies and social structures (like colonialism and markets) on the environment
- Uncovering the interrelationships between the natural environment and human society by specifically looking at instances where those relationships break down through historical combinations of natural events, technological failures, and social policies
- Becoming familiar with the underlying scientific principles involved in the natural mechanisms of disasters (such as plate tectonics, hydrological cycle, and El Niño), particularly through learning the history of science and the influence of disasters in shaping environmental knowledge
- Exploring the limitations of technological fixes and social or institutional programs in regard to preventing natural disasters, while recognizing that these technologies and programs continue to change in response to historical disasters
- Learning how to recognize and utilize reliable sources of information about the environment and historical events through discussion assignments and reaction papers and by comparing historically changing explanations of environmental processes over the course of the semester
- By understanding that solutions to environmental problems are inextricably bound up with the ethics and values of a society through recognizing that environmental issues and social justice issues are regularly joined together in the circumstances of natural disasters

Student Learning Outcomes

This course fulfills the “can locate and critically evaluate information” Student Learning Outcome. This skill is developed and assessed through individual discussion assignments and History Labs that require research and analysis of a specific topic and through reaction papers that require critical analysis of a scholarly argument. This course also fulfills the “can communicate effectively” Student Learning Outcome through written work in essay exams and reaction papers and verbal communication in class discussions and History Lab presentations.

Course Requirements

1. **Exams**—There will be one midterm exam worth 100 points and a final exam worth 200 points. These will consist of identification terms and an essay question. A study guide will be handed out before each exam.

2. **Papers**—You will write three 4-5 page papers worth 100 points each. These are reaction papers based on particular readings. The papers are due on the day we discuss the reading. All papers must be typed, double spaced, and in 12 point font. There will be five paper opportunities from which you will choose three to write (everyone will write the first one). More detailed instructions and a specific prompt will be given for each paper.

3. **Discussion Assignments**—There will be periodic scheduled and unscheduled assignments such as reading outlines, internet research, reflection papers, film review, disasters in the news, etc. These are intended to facilitate your engagement with course materials and ideas. They will also initiate many of the class discussions. Each one will be graded out of 20 points and the top 10 will be kept for a maximum of 200 points.

4. **History Labs**—These are small group practical research, analysis, and presentation exercises worth 50 points each. You will be given a topic and a set of research questions for each one. Each person will collect some research notes before class; the groups will work on compiling, constructing an interpretation, and presenting an argument during the class; then the group will submit a written product for posting on the Moodle page.

Readings

- Donald R. Prothero, *Catastrophes: Earthquakes, Tsunamis, Tornadoes and other Earth Shattering Disasters*
- Martin Redfern, *The Earth: A Very Short Introduction*
- Charles Perrow, *Normal Accidents: Living with High Risk Technologies*
- There will also be a few articles or book chapters posted on Moodle

Policies

- **Academic Freedom and Responsibility:** Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.
Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.
(Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".)
- **Assignments:** Assignments must be turned in during class on the due date. Late assignments will not be accepted except by special arrangement with me—you must have a serious and compelling reason and late assignments may still be subject to a penalty of one grade level per day. There will be no make-ups for exams missed in an unexcused absence. If you will have an excused absence on an exam day or paper due date you must notify me and if possible make arrangements ahead of time.
- **Attendance:** Attending every class is required, except for those days on which you have a serious medical or other legitimate emergency, an absence that is excused under the University's religious and cultural policy, or a pre-scheduled University event (athletic event, performance, etc.). Notify me of these absences as soon as you are able in order to have them excused and arrange for make up work. Attendance will be tracked with a daily sign in sheet.
 - Students who maintain perfect attendance will gain 5 extra points. Students who miss only 2 classes will gain 2 points. Students who have more than five unexcused absences will lose 5 points from their Discussion Grade.
- **Disability Accommodations:** The University of Minnesota is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact Disability Resource Center at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with Disability Resource Center and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the Disability Resource Center website, <https://diversity.umn.edu/disability/>.

- **Equal Opportunity:** The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf.
- **Grading:** Engagement with the course material, the professor, and your fellow students is valued more highly in this course than the simple memorization and regurgitation of facts, names, and dates. Although, you will need to use historical details effectively as evidence and examples for your own interpretations and explanations. In this course we are searching for the meanings, causes, and consequences of past events. The “who, what, when, and where” are only important (and useful) in so far as they guide us to the “why and the so what.” Grading will take into account your effort to engage with the material and these concepts.

Assignment values Exams 30%
Reaction papers 30%
Discussion assignments 20%
History Labs 20%

Grade Ranges

A+ 98-100%	B+ 88-89%	C+ 78-79%	D+ 68-69%	F <60%
A 93-97%	B 83-87%	C 73-77%	D 63-67%	
A- 90-92%	B- 80-82%	C- 70-72%	D- 60-62%	

SCHEDULE

****Indicates scheduled discussion assignments****

Week One

Tuesday Introductions

Thursday Personal Disasters and the Johnstown flood

Reading—Steinberg, “What is a Natural Disaster?” (Moodle)

****Bring a personal disaster story****

Week Two

Tuesday What is a Natural Disaster?

Reading—Prothero chp 5 and 12

Thursday Disasters in Mythology

Reading—DeVilliers Chp 1 “Doomsday as a State of Mind” and 2 “Catastrophe in Human Life” (Moodle)

****Bring an example of disaster story in mythology****

Week Three

Tuesday History of Science and Earth Systems

Reading—Perrow, “Introduction;” Prothero “Prologue”

Thursday History of Science and Earth Systems

Reading—Redfern chp 1, 5, and 7

****Earth System diagram (group project)****

Week Four

Tuesday Volcanoes through History

Reading—Prothero chp 3; Redfern chp 6

Thursday Normal Accidents

Reading—Perrow chp 1 and 2

Reaction Paper due

Week Five

Tuesday Historical Earthquakes

Reading—Prothero chp 1

Thursday Historical Earthquakes

****Primary source Earthquake Narrative****

Week Six

Tuesday Social Environment

Reading—Ramroth chp 1 “It takes a Disaster” and 4 “Overcrowding” (Moodle)

****Jacob Riis analysis****

Thursday Social Environment

Reading—Callenbach, “Urban Ecology;” Tarr, “Urban Environmental History” (Moodle)

History Lab 1—City Systems

Instructions: How does a city work? Each group will gather information, organize it, and think about the meaning, connections, and significance for a particular example of a city system in Minneapolis, MN. You will present your information and ideas to everyone else during the class discussion portion of the History Lab.

Assignment: Each person will prepare some research notes and each group will turn in a single outline and interpretive explanation combining everyone's research. These will be posted on Moodle.

1. What are the different components of your system how do they function and interact and how did they develop over time? (environmental, technological, and social components)
 2. What are the vulnerabilities of this system to failure and disaster?
 3. What role does this system play during a disaster? Is there any related disaster planning in place? Has this system been impacted by disaster in the past?
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Week Seven

Tuesday Wind and Water in History

Reading—Prothero, chp 6; Redfern, chp 4

Thursday Wind and Water in History

Reading—Film “Storm that Drowned a City” (Moodle)

****Hurricane comparison****

Week Eight

Tuesday Historical City Fires

Reading—Ramroth chp 2 “Fire” and 3 “Codes” (Moodle)

Thursday Historical Wild Fires

Reading—Mike Davis, “The Case for Letting Malibu Burn” (Moodle)

Reaction Paper due

Week Nine

Tuesday **Spring Break**

Thursday **Spring Break**

Week Ten

Tuesday Review

Thursday **Exam** (Bring Bluebook)

Week Eleven

Tuesday Disease and Pandemics through History

Reading—McNeil, “Yellow Jack and Geopolitics” (Moodle)

Thursday Disease and Pandemic through History

History Lab 2 Disease

Instructions: Choose a disease from the list. Each group will gather information, organize it, and think about the meaning, connections, and significance for a specific historical disease event. You will present your information and ideas to everyone else during the class discussion portion of the History Lab.

Assignment: Each person will prepare some research notes (including some first person accounts/primary source material) and each group will turn in a single outline and interpretive explanation combining everyone’s research. These will be posted on Moodle.

1. Describe the history of this disease event: including, origin and transmission; treatment and prevention efforts; and interconnections with environmental, technological, and social systems.
 2. What were the individual and collective consequences?
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Week Twelve

Tuesday Drought and Famine through History

Reading—Arnold, “Hunger in the Garden of Plenty” (Moodle)

Reaction Paper due

Thursday Drought and Famine through History

Reading—Cunfer, “Scaling the Dust Bowl”; Film—*The Plow that Broke the Plains* (Moodle)

Reaction Paper due

Week Thirteen

Tuesday Engineering Disasters through History

Reading—Petroski, “To Engineer is Human,” chp 1 and 2 (Moodle)

Thursday Engineering Disasters through History

History Lab 3—Engineering Disaster

Instructions: Analyze the 2007 I-35W Bridge Collapse. Each group will gather information, organize it, and think about the meaning, connections, and significance of this event. You will present your information and ideas to everyone else during the class discussion portion of the History Lab.

Assignment: Each person will prepare some research notes and each group will turn in a single outline and interpretive explanation combining everyone’s research. These will be posted on Moodle.

1. What were the different components of this engineering failure? How did they interact to create the event?

2. Analyze this event in relation to Perrow's discussion "Normal Accidents" and in comparison with other disasters we have studied in this course.

Week Fourteen

Tuesday Tsunamis in History

Reading—Prothero chp 2

****Fukushima Daiichi****

Thursday Enviro-technological Disasters

Reading—Pritchard, "An Envirotechnical Disaster" (Moodle)

Reaction Paper due

Week Fifteen

Tuesday Pollution and Chemicals: Historical Environmental Impact

Reading—Perrow chp 4

****Discussion Assignment due****

Thursday Climate Change: a slow-motion disaster with a long history

Reading—Prothero chp 10; Film—*An Inconvenient Truth*

****Film Review****

Week Sixteen Climate Change

Tuesday **History Lab 4 Environment and Social Conflict in Climate Change**

Instructions: Examine the interconnections of earth systems, technology, and social systems in the history of climate change. Each group will gather information, organize it, and think about the meaning, connections, and significance of this event. You will present your information and ideas to everyone else during the class discussion portion of the History Lab.

Assignment: Each person will prepare some research notes and each group will turn in a single outline and interpretive explanation combining everyone's research. These will be posted on Moodle. More detailed instructions and sources will be provided

1. What are the specific points of interaction between human society and the environment within this event?
2. How have people perceived and reacted to climate change? Why is it such a contentious issue?
3. How does climate change compare with the other disasters we have studied in this course?

Thursday **History Lab 4** continued

FINAL EXAM

TBA

This schedule is tentative and may be adjusted as we work through the semester.